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NEWS RELEASE

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North Idaho Study Shows Rising Levels of Air Pollution Impacts Healthcare Visits

A unique study concerning the effects of air pollution on human health shows that respiratory and cardiovascular health are impacted by increased levels of air particulates from pollution.

The North Idaho study compared days of increased air pollution to people's visits to doctors, acute care clinics, hospitals and other healthcare providers. Data on healthcare encounters over a two-year period was collected from major health insurance companies and compared to air quality data collected by the Idaho Department of Environmental Quality (IDEQ). The study originally was intended to the investigate the relationship between field burning in North Idaho and health effects, but was modified to study air pollution in general due to the low number of burn days during the two-year study period.

"This analysis is unique because of the type of data collected and used," says Jim Vannoy, manager of the Environmental Health Education and Assessment Program in the Idaho Department of Health and Welfare's Division of Health. "While there are over 2,000 studies that used hospital admissions or mortality data to show how air pollution affects health, this study includes a broader selection of healthcare facilities, such as urgent care clinics, private practice physicians and specialty medical clinics, along with hospitals."

Vannoy explains that by including a wider range of medical care facilities, study results are more reliable than those studies only utilizing hospital or mortality data. “From this study we learned that high levels of air pollution markedly increased people’s need for medical care for cardiac, stroke and respiratory conditions,” he says.

Increases in large particulate matter that is produced by forest fires, automobiles, dust and agricultural practices were associated with a 33-percent increase in medical visits for acute stroke and a 27-percent increase in visits for chronic cardiac conditions. The increases in air pollution also were associated with a 13-percent increase in acute lower respiratory healthcare encounters, such as pneumonia and bronchitis, and a 10-percent increase in acute upper respiratory visits, for illnesses such as sinus infections and laryngitis.

“For people who have suffered a stroke or have respiratory or cardiac conditions, the information from this study shows how important it is for them to avoid or decrease the amount of time outdoors when air quality is poor,” Vannoy says.

As the population of North Idaho grows, air pollution is expected to increase and become of greater concern for people who suffer from these illnesses. The Idaho Division of Health recommends that anyone wishing to reduce the impact of air pollution on their health consider the following:

- Carpool, vanpool or use public transit to get to work;
- Avoid unnecessary driving by combining several local trips into one;
- Walk or ride a bike rather than driving;
- Maintain your vehicle in proper working order;
- Minimize open burning of yard wastes and land clearing debris. Grind or chip the material, compost it, or take to the county solid waste center where it can be recycled for energy production; and
- If you have recurrent lung or heart disease, avoid or decrease the amount of time outdoors when air quality is poor. This especially includes avoiding exercise outdoors when air quality is poor. Daily air quality is reported during local weather reports or can be found on the IDEQ website: http://www.deq.idaho.gov/air/aqindex.cfm.

The complete study can be found at www.healthandwelfare.idaho.gov or by clicking here. For questions or comments regarding this study please contact the Environmental Health Education and Assessment Program at 1-866-445-8647.

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BUREAU OF COMMUNITY AND ENVIRONMENTAL HEALTH

AIR POLLUTION AND HEALTH EFFECTS IN NORTHERN IDAHO

In 2004, the Idaho Department of Health and Welfare's Bureau of Community and Environmental Health received a grant from the Environmental Protection Agency (EPA) to study the relationship between air pollution and its potential to cause harmful health effects in North Idaho. The grant was originally funded to study the relationship between field burning and health effects, but had to be modified to air pollution in general due to the low number of burn days during the study period.

What is air pollution?
Air pollution is made of solids such as dirt, dust, pollen, molds, soot, ashes and aerosols that are formed in the atmosphere. These particles can be directly released into the air from burning wood, dust storms, agricultural burning, or they can form when gases from power plants, industries and automobiles are released into the air.

Why study air pollution in northern Idaho?
Over the past several years, northern Idaho has seen an increase in population, automobiles, and industry and is subject to agricultural burning, all factors that can lead to an increase in air pollution. Current research is demonstrating that air pollution is becoming an important factor in the development of many respiratory and cardiovascular illnesses, such as asthma, coughing, difficulty breathing, chronic obstructive pulmonary disease (COPD), lung cancer, bronchitis and cardiovascular disease. This is especially true for sensitive populations such as children, the elderly, and those with existing respiratory or cardiovascular disease. This study in northern Idaho addresses this concern and looks for the possible relationship between air pollution levels and adverse health effects.

What kind of information did BCEH use in the study?
The Bureau of Community and Environmental Health requested air data from the Idaho Department of Environmental Quality (IDEQ). IDEQ monitors the air quality at several sites in northern Idaho. The information they provided included the hourly averages of air pollution levels. Healthcare encounter data were obtained from Blue Cross of Idaho, Regence Blue Shield, and Idaho Medicaid for the period October 1, 2002 through December 31, 2004. The air quality data and the healthcare data were then analyzed to determine if increases in daily air pollution resulted in increases in healthcare encounters.

What were the results of the study?
The study found that during periods of higher air pollution, healthcare encounters increased for stroke, respiratory, and cardiac illnesses. Increases in air pollution were associated with a 13-percent increase in healthcare encounters for lower respiratory illnesses, such as pneumonia and bronchitis. The pollution increases were associated with a 10-percent increase in healthcare

encounters for upper respiratory illnesses, such as sinus infection and laryngitis. The study found that three days after the air pollution increased, there was an associated healthcare encounter increase of 27-percent for cardiovascular illness, such as coronary atherosclerosis and cardiomyopathy (inflamed heart muscles).
It also found that four days after an increase in air pollution, healthcare encounters for stroke increased 33 percent. This study did not find any association between increased air pollution levels and increased asthma healthcare encounters. However, other studies have documented increased healthcare encounters for asthma when air pollution levels increase.

What can I do to reduce the risk of adverse health effects from exposure to elevated air pollution levels?
Because of the association between elevated levels of air pollution and increased health effects found in this study, continued efforts to reduce the impacts of burning, automobile, power plant and other industry emissions should be pursued in order to reduce air pollution related illnesses. This may include the following:

- Carpool to work or use local public transit
- Avoid unnecessary driving by combining several local trips into one
- Walk or ride a bike instead of driving
- Maintain your vehicle in proper working order
- Fill your gas tank in the evening when temperatures have cooled
- Mow your lawn in the evening when temperatures have cooled or consider alternative methods such as electric or reel push mowers that generate no pollution
- If you have recurrent respiratory or cardiac illness, avoid or decrease the amount of time outdoors when air quality is poor. This especially includes avoiding exercise outdoors when air quality is poor. Daily air quality is reported during local weather reports or can be found on the IDEQ website: http://www.deq.idaho.gov/air/aqindex.cfm

The complete study can be found at http://www.healthy.idaho.gov ,click on *Environmental Health.* For questions or comments regarding this study please contact:

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